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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/731,004	12/10/2003	Masahiro Oshio	117780	9075

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EXAMINER	
DOUGHERTY, THOMAS M	
ART UNIT	PAPER NUMBER
2834	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

B/C

Office Action Summary	Application No.	Applicant(s)	
	10/731,004	OSHIO, MASAHIRO	
	Examiner	Art Unit	
	Thomas M. Dougherty	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 September 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) *5-9* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1203*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9/28//05 have been fully considered but they are not persuasive for the reasons cited in the Election/Restriction requirement.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kando et al. (US 6,717,327). Kando et al. show (fig. 1B) a surface acoustic wave device having a quartz substrate (1) and IDT electrodes *(3, 4) arranged on the quartz substrate and exciting a quasi-

longitudinal leaky surface acoustic wave, note however that this is regarded as a goal of the invention, as Kando et al. show the claimed structural features, this aspect is regarded as being met.

Kando et al. also note the quartz substrate being cut in an Euler angle range (0^0, 100 to 150^0, 0^0). See the ABSTRACT.

Kando et al. shows an electronic apparatus including, as a filter or a resonator, the surface acoustic wave device. Note col. 1, lines 16-18 where he notes the devices like this are intended to be used in mobile communication devices.

Kando et al. don't note a standardized thickness t of the substrate such that it is set to a range of $1<t/\lambda<35$ where λ is the IDT wavelength. λ however is a variable which is applied to the device. Consequently, the claimed range may be met by Kando et al. depending on the applied value of λ.

Claims 1, 2 and 4 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over the Yong et al. article "ANALYSIS OF HIGH VELOCITY PSEUDO-SURFACE ACOUSTIC WAVE (HVPSAW) IN QUARTZ PERIODIC STRUCTURES WITH ELECTRODE FINGERS". Yong et al. note (p. 302, col. 2, first paragraph under section III) a surface acoustic wave device having a quartz substrate and IDT electrodes arranged on the quartz substrate and exciting a quasi-longitudinal leaky surface acoustic wave, see the last two sentences in that paragraph. Yong et al. also note the quartz substrate being cut in an Euler angle range (0^0, 100 to 150^0, 0^0). See above noted area in the article.

Yong et al. notes use of the device as a filter or a resonator (see the Introduction). As noted these devices are employed in mobile communication devices.

Yong et al. don't note a standardized thickness t of the substrate such that it is set to a range of $1<t/\lambda<35$ where λ is the IDT wavelength. λ however is a variable which is applied to the device. Consequently, the claimed range may be met by Yong et al. depending on the applied value of λ.

Claims 1 and 4 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kadota (US 6,710,509). Kadota shows (fig. 1B) a surface acoustic wave device having a quartz substrate (1) and IDT electrodes (2) arranged on the quartz substrate and exciting a quasi-longitudinal leaky surface acoustic wave, see ABSTRACT.

Kadota notes that the inventions of this sort are used in electronic apparatus including, as a filter or a resonator, the surface acoustic wave device. Note col. 1, lines 11-13 where he notes the devices like this are intended to be used in mobile communication devices.

Kadota doesn't note a standardized thickness t of the substrate such that it is set to a range of $1<t/\lambda<35$ where λ is the IDT wavelength. λ however is a variable which is applied to the device. Consequently, the claimed range may be met by Kando et al. depending on the applied value of λ.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over any of Kando et al. (US 6,717,327), the Yong et al. article "ANALYSIS OF HIGH VELOCITY PSEUDO-SURFACE ACOUSTIC WAVE (HVPSAW) IN QUARTZ PERIODIC

STRUCTURES WITH ELECTRODE FINGERS", or Kadota (US 6,710,509), further in view of Miura et al. (US 6,437,479). Given the inventions of Kando et al., Yong et al. and Kadota, none shows a reinforcing portion being provided on at least one of an IDTR electrode-forming surface and a surface opposite thereto, the reinforcing portion being disposed in a region in which the IDT electrodes are not formed.

Miura et al. show (e.g. fig. 8) a reinforcing portion (5) being provided on at least one of an IDT electrode-forming surface and a surface opposite thereto, the reinforcing portion being disposed in a region in which the IDT electrodes (2) are not formed.

Miura et al. don't show a quartz substrate or note generation of a leaky wave.

It would have been obvious to one having ordinary skill in the art to employ the reinforcing portion of Miura et al. in any of the devices of Kando et al., Yong et al. and Kadota, so that the reinforcing portion is provided on at least one of an IDT electrode-forming surface and a surface opposite thereto, the reinforcing portion being disposed in a region in which the IDT electrodes are not formed, since the design helps achieve temperature stability as noted in Miura's et al. SUMMARY OF THE INVENTION.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The remaining prior art cited reads on some aspects of the claimed invention.

tmd

tmd

January 3, 2006

Thomas M. Dougherty

TOM DOUGHERTY
PRIMARY EXAMINER